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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/666,466

09/16/2003

Jason E. Rehm

14045

8343

23676

7590

09/13/2006

SHELDON & MAK, INC
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PASADENA, CA 91101

EXAMINER

KRISHNAMURTHY, RAMESH

ART UNIT

PAPER NUMBER

3753

DATE MAILED: 09/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/666,466

Applicant(s)

REHM ET AL.

Examiner

Ramesh Krishnamurthy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07/03/2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 6, 8 - 11, 14, 15, 17 - 19 and 35 - 50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 6, 8 - 11, 14, 15, 17 - 19 and 35 - 50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119.

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

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This office action is responsive to amendment filed 07/03/2006.

Claims 1 – 6, 8 – 11, 14 – 15, 17 – 19 and 35 - 50 are pending.

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1 – 6, 8 – 11, 14, 15, 17 - 19 and 35 – 50 are rejected under 35 U.S.C. 103(a) as being obvious over Hasselbrink, Jr. et al. (US 6,782,746 B1) in view of Provin et al. (IEEE Transactions, January 2002, Vol. 25, No.1, pp. 59 – 63) and further in view of Rehm et al. (Micro Total Analysis Systems 2001, 227 – 229)

The applied reference of Hasselbrink, Jr. et al. has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a)

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might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Hasselbrink, Jr. et al. discloses (see Fig. 1, for example) a device (100) for microfluidic control comprising: a conduit having a first end (140) and a second end (141), a first path (upstream of (140)) and second path (downstream of (141)) in fluid flow contact with the conduit; and a regulator (120) that is moveable within the conduit wherein the regulator comprises a substantially elastic material, the regulator is a composite polymer that is formed from a composite polymerizable mixture (Col. 6, line 36 – Col. 7, line 38) comprising a polymerizable precursor, a cross-linking agent and use of a photo-initiator is also disclosed. The regulator (100) has an outer dimension that is larger than the first and second ends of the conduit so that the regulator cannot pass out of the conduit.

The patent to Hasselbrink, Jr. et al. discloses the claimed invention with the exception of explicitly disclosing the elastic material to have a structural component or particulate filler.

Provin et al. discloses (on page 59, Col. 2) that it is known in the art to use particulate filler material such as ceramic powder with a liquid monomer for the purpose of providing the manufactured article with desired mechanical properties enabling their use as micro-components.

It would have been obvious to one ordinary skill in the art at the time the invention was made to have provided in Hasselbrink, Jr. et al. use of a particulate filler material in a liquid monomer for the purpose of providing the manufactured article with desired mechanical properties enabling their use as micro-components.

The combination of Hasselbrink, Jr. et al. and Provin et al. discloses the claimed invention with the exception of explicitly disclosing the polymerizable precursor to comprise a halogenated acrylate monomer.

Rehm et al. ('2001) teaches the use of (see lines 3 – 4 under the paragraph entitled "Fabrication") trifluoroethylacrylate i.e. a halogenated acrylate as a monomer in the fabrication of a mobile flow control element.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a halogen acrylate monomer in the fabrication of the regulator element in the combination of Hasselbrink, Jr. et al. and Provin et al. as a halogen acrylate monomer is an art recognized equivalent to the monomer(s) used in

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Hasselbrink, Jr. et al., as evidenced by its successful use in Rehm et al. in fabricating mobile flow control elements.

Regarding claims 37, 38, 41, 42, 45, 46, 49 and 50, it is noted that Hasselbrink, Jr. et al. teaches (col. 1, lines 30 – 33; & Col. 9, line 65 – Col. 10, line 5) the use of the micro-fluidic device for the applications recited in the claims.

Response to Arguments

4. Applicant's arguments with respect to claims rejected above have been considered but are moot in view of the new ground(s) of rejection.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

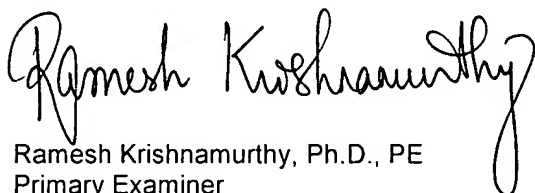
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramesh Krishnamurthy whose telephone number is

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(571) 272 – 4914. The examiner can normally be reached on Monday - Friday from 10:00 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Keasel, can be reached on (571) 272 – 4929. The fax phone number for the organization where this application or proceeding is assigned is (571) 273 – 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, reading "Ramesh Krishnamurthy". The signature is fluid and cursive, with the first name "Ramesh" and last name "Krishnamurthy" clearly distinguishable.

Ramesh Krishnamurthy, Ph.D., PE
Primary Examiner
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